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SHOW FILES
File 155:MEDLINE(R) 1966-2002/Apr W3
File   5:Biosis Previews(R) 1969-2002/Apr W3
         (c) 2002 BIOSIS
File  34:SciSearch(R) Cited Ref Sci 1990-2002/Apr W4
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File  71:ELSEVIER BIOBASE 1994-2002/Apr W4
         (c) 2002  Elsevier Science B.V.
File  73:EMBASE 1974-2002/Apr W3
         (c) 2002 Elsevier Science B.V.
File  76:Life Sciences Collection 1982-2002/Apr
         (c) 2002 Cambridge Sci Abs
File 144:Pascal 1973-2002/Apr W4
         (c) 2002 INIST/CNRS
File 351:Derwent WPI 1963-2001/UD,UM &UP=200227
         (c) 2002  Thomson Derwent
?
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?DS

Set     Items   Description
S1         53   TRIBONEC? OR MEGAKARYOCYTE(W)STIMULATING(W)FACTOR?
S2         17   RD (unique items)
?
?
?T S2/3 AB/1-17

 2/AB/1     (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11619251   21409063   PMID: 11518279
   Homology of lubricin and superficial zone protein (SZP): products of
 megakaryocyte     stimulating     factor   (MSF)  gene expression by human
synovial fibroblasts and articular chondrocytes localized to chromosome
1q25.
  Jay GD; Tantravahi U; Britt DE; Barrach HJ; Cha CJ
  The Department of Medicine, Rhode Island Hospital, Providence 02903, USA.
gregory jay md@brown.edu
  Journal of orthopaedic research (United States)  Jul 2001, 19 (4)
 p677-87, ISSN 0736-0266   Journal Code: JIQ
  Contract/Grant No.: K08AG01008, AG, NIA
  Languages: ENGLISH
  Document type: Journal Article
  Record type: Completed
  We have previously identified megakaryocyte     stimulating factor
(MSF) gene expression by synovial fibroblasts as the origin of lubricin in
the synovial cavity. Lubricin is a mucinous glycoprotein responsible for
the boundary lubrication of articular cartilage. MSF has a significant
homology to vitronectin and is composed of 12 exons. RNA was purified from
human synovial fibroblasts and articular chondrocytes grown in vitro from
tissue explants obtained from subjects without degenerative joint disease.
RT-PCR was used with multiple complimentary primer pairs spanning the
central mucin expressing exon 6 of the MSF gene and individual exons on
both the N- and C-terminal sides of exon 6. Exons 2, 4 and 5 appear to be
variably expressed by synovial fibroblasts and articular chondrocytes.
Lubricating mucin, in the form of MSF, is expressed by both chondrocytes
and synovial fibroblasts in vitro. Both lubricin and superficial zone
protein (SZP), a related proteoglycan, share a similar primary structure
but could differ in post-translational modifications with O-linked
oligosaccharides which are predominant in lubricin and with limited amounts
chondroitin and keratan sulfate found in SZP. Since most of the MSF exons
are involved in the expression of lubricating mucin, a strong homology to
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vitronectin persists. It is therefore appropriate to consider that both SZP and lubricin occupy a new class of biomolecules termed tribonectins . Screening of a human genome bacterial artificial chromsome (BAC) library with a cDNA primer pair complimentary for exon 6 identified two clones. Both clones were complimentary for chromosome 1q25 by in situ hybridization. This same locus was previously implicated in camptodactyl-arthropathy-pericarditis syndrome (CAP) by genetic mapping. It is hypothesized that CAP, a large joint arthropathy, may be associated with ineffective boundary lubrication provided by synovial fluid.

2/AB/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11137312 20531689 PMID: 11081439
Identification of viral induced genes in Ig+ leucocytes of Japanese flounder Paralichthys olivaceus, by differential hybridisation with subtracted and un-subtracted cDNA probes.
Aoki T; Hirono I; Kim MG; Katagiri T; Tokuda Y; Toyohara H; Yamamoto E
Department of Aquatic Biosciences, Tokyo University of Fisheries, Minato, Japan. aoki@tokyo-u-fish.ac.jp
Fish & shellfish immunology (ENGLAND) Oct 2000, 10 (7) p623-30, ISSN 1050-4648 Journal Code: DR8
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Up-regulated genes of leucocytes expressing immunoglobulin (Ig+ leucocytes) of hirame rhabdovirus (HRV)-infected Japanese flounder were identified by differential hybridisation, using subtracted and un-subtracted cDNA probes. Ig+ leucocytes were separated from apparently healthy and HRV-infected Japanese flounder by the magnetic beads antibody method using mouse anti-Japanese flounder Ig monoclonal antibody (mab). A cDNA library was constructed from HRV-infected Japanese flounder leucocytes, and was screened with subtracted cDNA probes enriched in genes up-regulated by HRV infection. Fifty cDNAs were isolated for further analysis. These included cDNAs coding for homologues of interferon-inducible 56K protein (IFI56), Stat3, CEF-10, RGS5, inducible poly(A) binding protein, prolylcarboxylpeptidase, basigin III (Ig superfamily), MUC-18 (Ig superfamily), proteasome-nexin 1 (SERPIN), herpes virus entry mediator (TNFR family), collagenase III, gelatinase-b, megakaryocyte stimulating factor , Rab8-interacting protein, IgM, IgD and 20 unknown cDNA clones. The majority of these identified genes are reported for the first time in fish. From leucocytes mRNA for homologues of IFI56, CEF-10, Stat3, SERPIN and inducible poly (A) binding protein expression was shown to increase following HRV infection.

2/AB/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10958989 20556743 PMID: 11102929
Clinical variability and genetic homogeneity of the camptodactyly-arthropathy-coxa vara-pericarditis syndrome.
Faivre L; Prieur AM; Le Merrer M; Hayem F; Penet C; Woo P; Hofer M; Dagoneau N; Sermet I; Munnich A; Cormier-Daire V
Departement de Genetique, Hopital des Enfants Malades, Paris, France.
American journal of medical genetics (UNITED STATES) Nov 27 2000, 95 (3) p233-6, ISSN 0148-7299 Journal Code: 3L4
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
The camptodactyly-arthropathy-coxa vara-pericarditis syndrome (CACP) is

an autosomal recessive condition characterized by the association of congenital or early onset camptodactyly and noninflammatory arthropathy with synovial hyperplasia. Progressive coxa vara deformity and/or noninflammatory pericardial or pleural effusions have been observed in some patients. Recently, the disease gene has been assigned to human chromosome region 1q25-q31, and truncating mutations have been identified in the megakaryocyte stimulating factor gene. Studying 12 patients from 8 unrelated families, we emphasized hip and spine involvement, particularly in the course of the disease as shown in a 58-year-old patient. Despite clinical variability, linkage studies support genetic homogeneity of the disease.

2/AB/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10931648 20573856 PMID: 11124536
Isolation, characterization and mapping of the mouse and human PRG4 (proteoglycan 4) genes.
Ikegawa S; Sano M; Koshizuka Y; Nakamura Y
Laboratory of Genome Medicine, Human Genome Center, Institute of Medical Science, The University of Tokyo, Tokyo, Japan. sikegawa@ims.u-tokyo.ac.jp
Cytogenetics and cell genetics (SWITZERLAND) 2000, 90 (3-4) p291-7, ISSN 0301-0171 Journal Code: DXK
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
PRG4 (proteoglycan 4) has been identified as megakaryocyte stimulating factor and articular superficial zone protein. PRG4 has characteristic motifs including somatomedin B and hemopexin domains, a chondroitin sulfate-attachment site and mucin-like repeats. During a screen of genes implicated in ectopic ossification, we found a novel mouse gene highly homologous to human and bovine PRG4 genes. Here, we report isolation, characterization and mapping of the gene, Prg4 together with characterization of its human orthologue. Prg4 cDNA was 3,320 bp long, encoding a 1,054 amino-acid protein. Human and mouse PRG4 genes each consisting of 12 exons spanned 18 and 16 kb, respectively. Characteristic motifs were conserved across species; however, the mucin-like repeat regions were highly diverse in length between species with a tendency that larger animals had longer repeats. Expression of human and mouse PRG4 genes was similar and found not only in cartilage, but also in liver, heart, lung, and bone. Expression of the mouse gene increased with progression of ectopic ossification. Multiple tissue-specific splicing variants lacking some of the motifs were found in both human and mouse. Although a specific role in the articular joint has previously been reported, the presence of multi-functional motifs as well as unique expression and alternative splicing patterns suggest that PRG4 functions in several distinctive biological process including regulation of ossification. Copyright 2000 S. Karger AG, Basel.

2/AB/5 (Item 5 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10575433 20205636 PMID: 10743795
Lubricin is a product of megakaryocyte stimulating factor gene expression by human synovial fibroblasts.
Jay GD; Britt DE; Cha CJ
Department of Medicine, Brown University School of Medicine, Providence, RI, USA. gregory jay MD@brown.edu
Journal of rheumatology (CANADA) Mar 2000, 27 (3) p594-600, ISSN 0315-162X Journal Code: JWX

Comment in J Rheumatol. 2000 Mar;27(3) 567-8
Languages: ENGLISH
Document type: Journal Article
Record type: Completed

OBJECTIVE: The boundary lubricating ability of human synovial fluid has been attributed to lubricin, a mucinous glycoprotein. We investigated the primary structure of lubricin and its cellular origin. METHODS: Lubricin was purified from pooled synovial fluid aliquots with normal lubricating activity obtained from patients with osteoarthritis. Lubricating ability of lubricin was assayed in a friction apparatus that oscillates natural latex against a ring of polished glass. Native and lubricin deglycosylated with O-glycosidase DS and NANase III were trypsinized and sequenced by liquid chromatography mass spectrometry. Sequence results were compared to known structures in GenBank. Sequence data from strong matches were used in creating cDNA primers for reverse transcription-polymerase chain reaction (RT-PCR) with RNA from human synovial fibroblasts obtained intraoperatively. RESULTS: Purified lubricin possesses an apparent molecular weight of 280 kDa on sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE). Deglycosylation decreased the apparent molecular weight on SDS-PAGE to 120 kDa. Sequences specific for megakaryocyte stimulating factor precursor (MSF) were identified in GenBank. A 100% match was observed for exons 6 though 9 of MSF. Lubricin/MSF reduced the coefficient of friction (m) in the latex:glass bearing from 0.131 to 0.047. MSF is 1404 amino acids in size with multiple functional domains similar to vitronectin. The reported structure of MSF contains a centrally located mucin (exon 6) with 76 repeats of the degenerate motif of KEPAPTT, the presumed site of extensive O-linked glycosylation. RT-PCR with primers complementary for Pro214- Ala307 in exon 6 and RNA from human synovial fibroblasts produced the predicted product size of 280 bp. CONCLUSION: Lubricin is secreted by synovial fibroblasts via expression of the MSF gene. Lubricin is constructed of MSF exons 6 through 9 but the presence of other exons cannot be excluded. Lubricin/MSF is the only lubricating component in the final lubricating fraction of human synovial fluid.

2/AB/6 (Item 6 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10389532 20014745 PMID: 10545950

CACP, encoding a secreted proteoglycan, is mutated in camptodactyly-arthropathy-coxa vara-pericarditis syndrome.

Marcelino J; Carpten JD; Suwairi WM; Gutierrez OM; Schwartz S; Robbins C; Sood R; Makalowska I; Baxevanis A; Johnstone B; Laxer RM; Zemel L; Kim CA; Herd JK; Ihle J; Williams C; Johnson M; Raman V; Alonso LG; Brunoni D; Gerstein A; Papadopoulos N; Bahabri SA; Trent JM; Warman ML

Department of Genetics and Center for Human Genetics, Case Western Reserve University and University Hospitals of Cleveland, Cleveland, Ohio, USA.

Nature genetics (UNITED STATES) Nov 1999, 23 (3) p319-22, ISSN 1061-4036 Journal Code: BRO
Contract/Grant No.: AR43827, AR, NIAMS
Languages: ENGLISH
Document type: Journal Article
Record type: Completed

Altered growth and function of synoviocytes, the intimal cells which line joint cavities and tendon sheaths, occur in a number of skeletal diseases. Hyperplasia of synoviocytes is found in both rheumatoid arthritis and osteoarthritis, despite differences in the underlying aetiologies of the two disorders. We have studied the autosomal recessive disorder camptodactyly-arthropathy-coxa vara-pericarditis syndrome (CACP; MIM 208250) to identify biological pathways that lead to synoviocyte

hyperplasia, the principal pathological feature of this syndrome. Using a positional-candidate approach, we identified mutations in a gene (CACP) encoding a secreted proteoglycan as the cause of CACP. The CACP protein, which has previously been identified as both ' megakaryocyte stimulating factor precursor' and 'superficial zone protein', contains domains that have homology to somatomedin B, heparin-binding proteins, mucins and haemopexins. In addition to expression in joint synovium and cartilage, CACP is expressed in non-skeletal tissues including liver and pericardium. The similarity of CACP sequence to that of other protein families and the expression of CACP in non-skeletal tissues suggest it may have diverse biological activities.

2/AB/7 (Item 7 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10038646 99120896 PMID: 9920774
Articular cartilage superficial zone protein (SZP) is homologous to megakaryocyte stimulating factor precursor and Is a multifunctional proteoglycan with potential growth-promoting, cytoprotective, and lubricating properties in cartilage metabolism.
Flannery CR; Hughes CE; Schumacher BL; Tudor D; Aydelotte MB; Kuettner KE ; Caterson B
Cardiff School of Biosciences, Cardiff University, Museum Avenue, PreClinical Buildings, Cardiff, Wales, CF1 3US, United Kingdom. flannerycr@cardiff.ac.uk
. Biochemical and biophysical research communications (UNITED STATES) Jan 27 1999, 254 (3) p535-41, ISSN 0006-291X Journal Code: 9Y8
Contract/Grant No.: 2P50-AR39239, AR, NIAMS; AR40364, AR, NIAMS
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
We have performed cDNA sequencing and homology analyses to elucidate the complete amino acid composition for a superficial zone protein (SZP) from human and bovine cartilage which has previously been shown to be a proteoglycan specifically synthesized by chondrocytes located at the surface of bovine articular cartilage and also some synovial lining cells. The results of this study indicate that cartilage SZP is homologous with a glycoprotein first described as the precursor protein of a megakaryocyte stimulating factor (MSF). Sequence comparisons and analyses indicate that (i) the amino acid composition of SZP is highly conserved between bovine and human species, (ii) SZP contains structural motifs at the N- and C-termini which are similar to those found in vitronectin and which may impart cell-proliferative and matrix-binding properties to the molecule, and (iii) SZP contains large and small mucin-like repeat domains composed of the sequences KEPAPTTT/P (76-78 repeats) and XXTTTX (6-8 repeats), respectively, which occur within a large central region of approximately 940 amino acids. The mucin-like domains are likely to be substituted with O-linked oligosaccharides which would impart lubricating properties to SZP which in part accumulates at the articular cartilage-synovial fluid interface. Additionally, we have shown that interleukin-1 inhibits the biosynthesis of chondrocyte SZP, while TGF-beta and IGF-1 increase its biosynthesis, and that in pathological (osteoarthritic) human articular cartilage SZP mRNA can be expressed as an alternatively spliced variant lacking exons 4 and 5 which encode a potential heparin binding domain. The occurrence of different SZP alternative splice variants and the differential expression of SZP in the presence of cytokines and growth factors suggest that SZP may play an important cytoprotective role by preventing cellular adhesion to the articular cartilage surface in normal cartilage metabolism. Modifications to the structure of SZP, coupled with inhibition of SZP synthesis during inflammation, may account for the attachment and invasion of pannus observed in inflammatory joint diseases.

2/AB/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09866356 98348332 PMID: 9685171
The efficacy of IL-3, SCF, IL-6, and IL-11 in treating thrombocytopenia.
Maslak P; Nimer SD
Department of Medicine, Memorial Sloan-Kettering Cancer Center, New York, NY 10021, USA.
Seminars in hematology (UNITED STATES) Jul 1998, 35 (3) p253-60, ISSN 0037-1963 Journal Code: UN9
Languages: ENGLISH
Document type: Journal Article; Review; Review, Tutorial
Record type: Completed
Suppression of normal hematopoiesis is a frequent complication of cancer or its treatment. The basis for dose-intensified cancer therapy in the 1990s was the discovery that hematopoietic growth factors and peripheral blood progenitor cell infusions can ameliorate some of its associated hematologic toxicities. Both granulocyte colony-stimulating factor and granulocyte macrophage colony-stimulating factor accelerate neutrophil recovery after chemotherapy and can mobilize peripheral blood progenitor cells for use in autologous or allogeneic transplantation. Unfortunately, the duration and severity of chemotherapy-induced thrombocytopenia is unaffected by the use of these myeloid growth factors. During the last 5 years, the activities of a variety of potential platelet or megakaryocyte - stimulating factors have been determined in clinical trials. The results of these studies are described.

2/AB/9 (Item 9 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09580630 97396960 PMID: 9253112
Differential effect of erythropoietin and GM-CSF on megakaryocytopoiesis from primitive bone marrow cells in serum-free conditions.
Cardier JE; Erickson-Miller CL; Murphy MJ
Hipple Cancer Research Center, Dayton, Ohio 45439-2092, USA.
Stem cells (UNITED STATES) 1997, 15 (4) p286-90, ISSN 1066-5099 Journal Code: BN2
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
In this study we have explored the effect of recombinant human erythropoietin (EPO) and recombinant murine GM-CSF on megakaryocyte progenitors (colony forming units-megakaryocyte [CFU-Mk]) using a serum-free fibrin clot assay and enriched primitive hematopoietic progenitors of marrow cells from day 4 post-5-fluorouracil-treated mice. We have monitored the production of high proliferative potential-colony forming cells ([HPP-CFC]; compact colonies, > 0.5 mm) and studied their relationship to CFU-Mk formation. EPO induced the formation of small numbers of megakaryocyte colonies, but acted together with the megakaryocyte - stimulating factors , stem cell factor (SCF) and interleukin (IL-3), to augment the size of CFU-Mk (colonies with > 50 megakaryocytes/colony). A strong correlation between the number of CFU-Mk and HPP-CFC formation from 5-fluorouracil bone marrow cells was observed when these cells were stimulated with EPO in the presence of SCF and IL-3. On the other hand, GM-CSF alone had no effect on megakaryocyte colony formation. Moreover, GM-CSF in the presence of SCF and IL-3 potentiates the HPP-CFC formation (i.e., an increase of 3.1-fold compared to the effect induced by SCF+IL-3) with strong inhibitory effects on the number and size

of megakaryocyte colonies. Although several studies suggest that EPO and GM-CSF can stimulate megakaryocytopoiesis, our results indicate that neither EPO nor GM-CSF alone are sufficient to stimulate primitive progenitors committed to the megakaryocyte lineage. The fact that EPO can exert a strong effect on the size of CFU-Mk induced by SCF/IL-3 suggests that only those megakaryocyte progenitors previously stimulated by other megakaryocyte stimulating factors are able to respond to EPO. These findings may explain the physiological and clinical observations in which high levels of EPO are often associated with thrombocytosis.

2/AB/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

04385903 81120591 PMID: 6970296
Enhancement of macrophage cytotoxicity to tumors and production of megakaryocyte - stimulating factors by microbial agents.
Ralph P; Williams N; Nakoinz I; Jackson H; Ito M; Azuma I; Yamamura Y
Kekkaku (JAPAN) Nov 1980, 55 (11) p499-503, ISSN 0022-9776
Journal Code: KUO
Languages: ENGLISH
Document type: Journal Article
Record type: Completed

2/AB/11 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12242230 BIOSIS NO.: 199900537079
Lubricin is a product of megakaryocyte stimulating factor (MSF) gene expression by human synovial fibroblasts.
AUTHOR: Jay Gregory D(a); Britt Deborah E(a); Cha Chung-Ja(a)
AUTHOR ADDRESS: (a)Providence, RI**USA
JOURNAL: Arthritis & Rheumatism 42 (9 SUPPL.):pS254 Sept., 1999
CONFERENCE/MEETING: 63rd Annual Scientific Meeting of the American College of Rheumatology and the 34th Annual Scientific Meeting of the Association of Rheumatology Health Professionals Boston, Massachusetts, USA November 13-17, 1999
ISSN: 0004-3591
RECORD TYPE: Citation
LANGUAGE: English
1999

2/AB/12 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09148875 BIOSIS NO.: 199497157245
A comparison of vitronectin and megakaryocyte stimulating factor .
BOOK TITLE: International Congress Series; Biology of vitronectins and their receptors
AUTHOR: Merberg David M(a); Fitz Lori J(a); Temple Patty(a); Giannotti Joanne(a); Murtha Pat(a); Fitzgerald Mike(a); Scaltreto Heidi(a); Kelleher Kerry(a); Preissner Klaus; et al
BOOK AUTHOR/EDITOR: Preissner K T; Rosenblatt S; Kost C; Wegerhoff J; Mosher D F: Eds
AUTHOR ADDRESS: (a)Genet. Inst., Cambridge, MA**USA
JOURNAL: International Congress Series (1042):p45-53 1993
BOOK PUBLISHER: Elsevier Science Publishers B.V., PO Box 211, Sara Burgerhartstraat 25, 1000 AE Amsterdam, Netherlands

Elsevier Science Publishing Co., Inc., P.O. Box 882,
Madison Square Station, New York, New York 10159-2101,
USA
CONFERENCE/MEETING: First International Vitronectin Workshop Marburg,
Germany August 25-28, 1993
ISSN: 0531-5131 ISBN: 0-444-81680-1
RECORD TYPE: Citation
LANGUAGE: English
1993

2/AB/13 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07510869 BIOSIS NO.: 000040067803
THERAPEUTIC USE OF GRANULOCYTE AND MONOCYTE COLONY-STIMULATING FACTORS
AUTHOR: GOLDE D W; GLASPY J
AUTHOR ADDRESS: DIV. HEMATOL.-ONCOL., UCLA SCH. MED., LOS ANGELES, CALIF.
JOURNAL: WILLIAMS, W. J., E. BEUTLER, A. J. ERSLEV AND M. A. LICHTMAN. HEMATOLOGY, FOURTH EDITION. XXXVII+1882P. MCGRAW-HILL, INC.: NEW YORK, NEW YORK, USA; AUCKLAND, NEW ZEALAND. ILLUS. MAPS. ISBN 0-07-070384-1. 0 (0). 1990. 273-278. 1990
CODEN: 32474
RECORD TYPE: Citation
LANGUAGE: ENGLISH
1990

2/AB/14 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

09092122 Genuine Article#: 366TN Number of References: 27
Title: Identification of viral induced genes in Ig plus leucocytes of Japanese flounder Paralichthys olivaceus, by differential hybridisation with subtracted and un-subtracted cDNA probes (ABSTRACT AVAILABLE)
Author(s): Aoki T (REPRINT) ; Hirono I; Kim MG; Katagiri T; Tokuda Y; Toyohara H; Yamamoto E
Corporate Source: TOKYO UNIV FISHERIES,DEPT AQUAT BIOSCI, LAB GENET & BIOCHEM, KONAN 4-5-7/TOKYO 1088477//JAPAN/ (REPRINT); KYOTO UNIV,GRAD SCH AGR/KYOTO 6068502//JAPAN/; TOTTORI PREFECTURAL FISHERIES EXPT STN,/TOTTORI 6890602//JAPAN/
Journal: FISH & SHELLFISH IMMUNOLOGY, 2000, V10, N7 (OCT), P623-630
ISSN: 1050-4648 Publication date: 20001000
Publisher: ACADEMIC PRESS LTD, 24-28 OVAL RD, LONDON NW1 7DX, ENGLAND
Language: English Document Type: ARTICLE
Abstract: Up-regulated genes of leucocytes expressing immunoglobulin (Ig + leucocytes) of hirame rhabdovirus (HRV)-infected Japanese flounder were identified by differential hybridisation, using subtracted and un-subtracted cDNA probes. Ig+ leucocytes were separated from apparently healthy and HRV-infected Japanese flounder by the magnetic beads antibody method using mouse anti-Japanese flounder Ig monoclonal antibody (mab). A cDNA library was constructed from HRV-infected Japanese flounder leucocytes, and was screened with subtracted cDNA probes enriched in genes up-regulated by HRV infection. Fifty cDNAs were isolated for further analysis. These included cDNAs coding for homologues of interferon-inducible 56K protein (IFI56), Stat3, CEF-10, RGS5, inducible poly(A) binding protein, prolylcarboxylpeptidase, basigin III (Ig superfamily), MUC-18 (Ig superfamily), proteasome-nexin 1 (SERPIN), herpes virus entry mediator (TNFR family), collagenase III, gelatinase-b, megakaryocyte stimulating factor , Rab8-interacting

protein, IgM, IgD and 20 unknown cDNA clones. The majority of these identified genes are reported for the first time in fish. From leucocytes mRNA for homologues of IFI56, CEF-10, Stat3, SERPIN and inducible poly (A) binding protein expression was shown to increase following HRV infection. (C) 2000 Academic Press.

2/AB/15 (Item 1 from file: 351)
DIALOG(R)File 351:Derwent WPI

013540467
WPI Acc No: 2001-024673/200103
XRAM Acc No: C01-007455
Novel tribonectin polypeptide useful as lubricant for treating osteoarthritis, comprises O-linked lubricating moiety
Patent Assignee: RHODE ISLAND HOSPITAL LIFESPAN PARTNER (RHOD-N); RHODE ISLAND HOSPITAL (RHOD-N)
Inventor: JAY G D
Number of Countries: 091 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200064930	A2	20001102	WO 2000US10953	A	20000424	200103	B
AU 200044852	A	20001110	AU 200044852	A	20000424	200109	
EP 1173567	A2	20020123	EP 2000926303	A	20000424	200214	
			WO 2000US10953	A	20000424		

Priority Applications (No Type Date): US 99298970 A 19990423
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200064930	A2	E	47	C07K-014/00	

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

AU 200044852	A		C07K-014/00	Based on patent WO 200064930
EP 1173567	A2	E	C12N-015/12	Based on patent WO 200064930

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

Abstract (Basic): WO 200064930 A2
Abstract (Basic):

NOVELTY - A tribonectin (I), a gene product of human megakaryocyte stimulating factor (MSF) gene, comprising at least one O-linked lubricating moiety, and a polypeptide comprising a sequence of at least 1-76 subunits each comprising at least 7 amino acids having at least 50% identity to a specific sequence (S1), where a non-identical amino acid is a conservative amino acid substitution, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated nucleic acid (II) encoding (I);

(2) a biocompatible composition suitable for inhibiting tissue adhesion formation, comprising (I); and

(3) diagnosing osteoarthritis or predisposition to osteoarthritis, by measuring the amount of MSF or its fragment in a biological sample of a mammal, such that an increased amount of MSF compared to a control indicating the presence of or predisposition to developing osteoarthritis.

ACTIVITY - Antiarthritic; osteopathic.

MECHANISM OF ACTION - Friction coefficient reducer.

USE - (I) and (II) are useful for lubricating mammalian joints, such as articulating joints of human, dog or horse. (I) in the form of a membrane, foam, gel or fiber, is useful for inhibiting adhesion formation between a first and second surface such as injured tissues of mammal, where the injury is caused by a surgical insertion or trauma, artificial device e.g. an orthopedic implant or pericardial tissue (claimed). (I) and (II) are useful for treating osteoarthritis. (II) is useful in gene therapy.

ADVANTAGE - Tribosupplementation does not substantially increase the viscosity of the solution, e.g. synovial fluid, blood, serum or unite, to which it is added (claimed) unlike viscosupplementation.

pp; 47 DwgNo 0/3

2/AB/16 (Item 2 from file: 351)
DIALOG(R)File 351:Derwent WPI

009039526
WPI Acc No: 1992-166888/199220
XRAM Acc No: C92-076698

Mega karyotic maturation factor treatment - increasing circulating platelet levels in thrombocytopenia, due to ineffective haematopoiesis etc.

Patent Assignee: AMGEN (AMGE-N)
Inventor: ARAKAWA T; HUNT P
Number of Countries: 021 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9206712	A1	19920430	WO 91US7367	A	19911002	199220	B
AU 9188688	A	19920520	AU 9188688	A	19911002	199233	
			WO 91US7367	A	19911002		
ZA 9108070	A	19920729	ZA 918070	A	19911009	199235	
EP 505552	A1	19920930	EP 91919689	A	19911002	199240	
			WO 91US7367	A	19911002		
JP 5503302	W	19930603	JP 91518291	A	19911002	199327	
			WO 91US7367	A	19911002		
EP 505552	A4	19940608	EP 91919689	A	19910000	199531	

Priority Applications (No Type Date): US 90596457 A 19901012
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9206712	A1	E	79	A61K-045/05	
Designated States (National): AU CA FI JP KR NO					
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU NL SE					
AU 9188688	A			A61K-045/05	Based on patent WO 9206712
ZA 9108070	A		74	A61K-000/00	
EP 505552	A1	E	79	A61K-045/05	Based on patent WO 9206712
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
JP 5503302	W		24	A61K-037/02	Based on patent WO 9206712
EP 505552	A4			A61K-045/05	

Abstract (Basic): WO 9206712 A

Prodn. comprises administering a megakaryocyte maturation factor (MMF); increase also comprises administering stem cell factor (SCF), granulocyte colony stimulating factor (G-CSF), interleukin - 3 (IL-3), IL-6 megakaryocyte colony stimulating factor (Meg-CSF) megakaryocyte stimulating factor (MSF) or erythropoietin (EPO); compsn. comprises purified and isolated MMF and an adjuvant, diluent, solubiliser, preservative or carrier; the MMF may be covalently attached to a water-soluble polymer, e.g. polyethylene glycol or a copolymer of polyethylene and polypropylene-glycol; assaying a MMF comprises

incubating the MMF with megakaryocytes in a proplatelet formation assay and monitoring the response of th m gakaryocytes to MMF, purificn. of a MMF from MMF-contg. material comprises chromatographing MMF- contg. material by ion exchange; treatment of thrombocytopenia in a mammal due to ineffective thrombopoiesis or abnormal treatment of thrombocytopenia in a mammal due, to accelerated platelet destruction comprises administering a MMF; and treatment of thrombocytopenia in a mammal due, to depopulation of stem cell or megakaryocyte compartments comprises administering a MMF and also SCF, G-CSF, GM-CSF, IL-3, IL-6, Meg-CSG, MSF or EPO.

USE - Used for idiopathic thrombocytopenic purpura, myelosuppressive drugs or irradiation, a plastic anaemia, congenital megakaryocytic hypoplasia or myelodysplastic syndrome. Also used to produce antibodies used in affinity chromatography or to treat conditions obtd. from excessive platelet prodn. by stabilising or decreasing circulating platelet levels

2/AB/17 (Item 3 from file: 351)
DIALOG(R)File 351:Derwent WPI

007445288
WPI Acc No: 1988-079222/198812
XRAM Acc No: C88-035498
New specific purified megakaryocyte stimulating factor - from e.g. cultured embryonic kidney cells, and new encoding nucleic acid sequence
Patent Assignee: MASSACHUSETTS INST TECHNOLOGY (MASI)
Inventor: ROSENBERG R D
Number of Countries: 019 Number of Patents: 010
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 260918	A	19880323	EP 87308118	A	19870915	198812	B
DK 8704852	A	19880318				198824	
AU 8778244	A	19880519				198828	
ZA 8706860	A	19880608	ZA 876860	A	19870914	198840	
JP 63239298	A	19881005	JP 87233621	A	19870917	198846	
PT 85730	A	19881014				198847	
US 4894440	A	19900116	US 86908183	A	19860917	199010	
US 5155211	A	19921013	US 86908183	A	19860917	199244	
			US 89437544	A	19891116		
EP 260918	B1	19930324	EP 87308118	A	19870915	199312	
DE 3784992	G	19930429	DE 3784992	A	19870915	199318	
			EP 87308118	A	19870915		

Priority Applications (No Type Date): US 86908183 A 19860917; US 89437544 A 19891116
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 260918	A	E	11		
Designated States (Regional): AT BE CH DE ES FR GB GR IT LI LU NL SE					
US 4894440	A		9		
US 5155211	A		9	C07K-015/00	Div ex application US 86908183 Div ex patent US 4894440
EP 260918	B1	E	24	A61K-037/02	
Designated States (Regional): AT BE CH DE ES FR GB GR IT LI LU NL SE					
DE 3784992	G			A61K-037/02	Based on patent EP 260918

Abstract (Basic): EP 260918 A
New purified megakaryocyte stimulatory factor (MSF) has mol. wt. 15000 (SDS-PAGE) and isoelectric point 5.1, and stimulates protein synthesis of cells of megakaryocyte lineage. Also new are (1)

nucleotide sequences encoding MSF and (2) procedures for assaying MSF.

More specifically, MSF has half-max. activity at a concn. of 0.8 pM.

USE/ADVANTAGE - MSF stimulates, by about 7-fold, prodn. of PF4-like proteins in rat promegakaryoblast cells, and has more of the activites of known haemopoietic growth factors. It is used to potentiate platelet function in patients with thrombocytoperia or artherosclerosis; in wound healing; in patients with anti-platelet antibodies, and to modify platelet function. Portions of MSF can be used to raise antibodies or as specific drug targets, and the nucleotide sequences can be used to make MSF with enhanced or altered activity.

In an example, serum-free supernatants from human embryonic kidney cells were conc. (300 times) by ultrafiltration then pptd. with (NH4)2SO4 at 80% satn. and centrifuged. Combined material from 90 l supernatant was resuspended in 120 ml pH 7.4 buffer contg. 1mM phenylmethylsulphonyl fluoride, dialysed against buffer and insolubles filtered off. The product (400ml;5.7g) was applied to a wheatgerm-agglutinin-Sepharose column, equilibrated with same buffer, and eluted with 12mM N-acetylglucosamine trimers in buffer. The active fractions (25.3mg; 0.3mg/ml) were concn. by ultrafiltration and the concentrate chromatographed on 'Biogel P200'. The eluate was conc. by dialysis and the concentrate (5mg; 0.7 mg/ml) chromatographed on a TSK-G3000 column to recover 0.23mg protein of specific activity 15 million units/mg, with total purification factor 0.75 million.

Abstract (Equivalent): EP 260918 B

A purified glycosylated megakaryocyte stimulatory factor in substantially homogeneous form, characterised by having a molecular weight of 15,000 Daltons on SDS-PAGE and an isoelectric point of 5.1, wherein said factor stimulates protein synthesis in cells of the megakaryocyte lineage.

(Dwg.0/0)

Abstract (Equivalent): US 5155211 A

Isolated megakaryocyte stimulatory factor (I) having mol.wt. of 15000 daltons on SDS-page and an isoelectric pt. of 5.1, is new. (I) stimulates specific protein synthesis of platelet granule components in cells of the megakaryocyte lineage.

(I) pref. exhibits half maximal activity at a concn. of 0.8 pM and is glycosylated. It is esp. purified from serum-free conditioned medium obtd. from cultured human embryonic kidney cells or is isolated from thrombocytopoenic plasma.

USE - For potentiating platelet function during thrombocytopoenia or atherosclerosis

US 4894440 A

Prepn. of megacaryocyte stimulating factor (I) comprises treating a concd. serum-free dispersion of human embryonic kidney cells with (NH) SO (more than 50% satn); sepn. of the pptd. proteins and dispersion with tris-buffer and aq. NaCl; sepn. of the insol. matter; treatment of the soln. with a lectin-Sepharose resin; elution of the bound protein from the resin using a chitin oligosaccharide soln; and purification of the eluate using a size-exclusion gel.

USE - The prods. stimulate the prodn. of blood platelet protein.

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09/556246
File 5:Biosis Previews(R) 1969-2003/Nov W5
(c) 2003 BIOSIS

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      Set  Items  Description
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          99541  STIMULATING
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? s s1 and glycosylation
             19  S1
          21566  GLYCOSYLATION
      S2      1  S1 AND GLYCOSYLATION
? t s2/3/1
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2/3/1
DIALOG(R)File 5:Biosis Previews(R)
(c) 2003 BIOSIS. All rts. reserv.

0012484332 BIOSIS NO.: 200000202645
Lubricin is a product of %%%megakaryocyte%%% %%%stimulating%%% factor gene expression by human synovial fibroblasts
AUTHOR: Jay Gregory D (Reprint); Britt Deborah E; Cha Chung-Ja
AUTHOR ADDRESS: Department of Emergency Medicine, Rhode Island Hospital, 593 Eddy Street, Providence, RI, 02903, USA**USA
JOURNAL: Journal of Rheumatology 27 (3): p594-600 March, 2000 2000
MEDIUM: print
ISSN: 0315-162X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

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? s s1 and exon()VI
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          31746  EXON
          30870  VI
             57  EXON(W)VI
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? s s1 and exon
             19  S1
          31746  EXON
      S4      2  S1 AND EXON
? t s4/3/1-2
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4/3/1
DIALOG(R)File 5:Biosis Previews(R)
(c) 2003 BIOSIS. All rts. reserv.

0013268847 BIOSIS NO.: 200100440686
Homology of lubricin and superficial zone protein (SZP): Products of %%%megakaryocyte%%% %%%stimulating%%% factor (MSF) gene expression by human synovial fibroblasts and articular chondrocytes localized to chromosome 1q25
AUTHOR: Jay Gregory D (Reprint); Tantravahi Umadevi; Britt Deborah E; Barrach Hans J; Cha Chung-Ja
AUTHOR ADDRESS: The Department of Medicine, Section of Emergency Medicine, Rhode Island Hospital, 593 Eddy Street, Providence, RI, 02903, USA**USA

JOURNAL: Journal of Orthopaedic Research 19 (4): p677-687 July, 2001 2001
MEDIUM: print
ISSN: 0736-0266
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

4/3/2
DIALOG(R)File 5:Biosis Previews(R)

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ISSN: 0315-162X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
? ds

Set	Items	Description
S1	19	MEGAKARYOCYTE()STIMULATING
S2	1	S1 AND GLYCOSYLATION
S3	0	S1 AND EXON()VI
S4	2	S1 AND EXON

? s s1 and linked

	19	S1
	184587	LINKED
S5	5	S1 AND LINKED

? t s5/3/1-5

5/3/1
DIALOG(R)File 5:Biosis Previews(R)

0014452827 BIOSIS NO.: 200300421546
Differential gene expression in the periprosthetic membrane: Lubricin as a new possible pathogenetic factor in prosthesis loosening.
AUTHOR: Morawietz Lars; Gehrke Thorsten; Frommelt Lars; Gratze Petra; Bosio Andreas; Moeller Johannes; Gerstmayer Bernhard; Krenn Veit (Reprint)
AUTHOR ADDRESS: Institute for Pathology, University Clinic Charite, Charite University Hospital, Humboldt University of Berlin, Schumannstrasse 20/21, 10117, Berlin, Germany**Germany
AUTHOR E-MAIL ADDRESS: veit.krenn@charite.de
JOURNAL: Virchows Archiv 443 (1): p57-66 July 2003 2003
MEDIUM: print
ISSN: 0945-6317
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

5/3/2
DIALOG(R)File 5:Biosis Previews(R)

0014145377 BIOSIS NO.: 200300104096
Boundary lubrication by lubricin is mediated by O-%%%linked%%% beta(1-3)Gal-GalNAc oligosaccharides.
AUTHOR: Jay Gregory D (Reprint); Harris Darcy A; Cha Chung-Ja
AUTHOR ADDRESS: Department of Emergency Medicine, Rhode Island Hospital, 593 Eddy Street, Providence, RI, 02903, USA**USA
AUTHOR E-MAIL ADDRESS: gregoryjayMD@brown.edu
JOURNAL: Glycoconjugate Journal 18 (10): p807-815 October 2001 2001
MEDIUM: print
ISSN: 0282-0080 (ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

5/3/3
DIALOG(R)File 5:Biosis Previews(R)

0013268847 BIOSIS NO.: 200100440686
Homology of lubricin and superficial zone protein (SZP): Products of %%%megakaryocyte%%% %%%stimulating%%% factor (MSF) gene expression by human synovial fibroblasts and articular chondrocytes localized to chromosome 1q25
AUTHOR: Jay Gregory D (Reprint); Tantravahi Umadevi; Britt Deborah E; Barrach Hans J; Cha Chung-Ja
AUTHOR ADDRESS: The Department of Medicine, Section of Emergency Medicine, Rhode Island Hospital, 593 Eddy Street, Providence, RI, 02903, USA**USA
JOURNAL: Journal of Orthopaedic Research 19 (4): p677-687 July, 2001 2001
MEDIUM: print
ISSN: 0736-0266
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

5/3/4
DIALOG(R)File 5:Biosis Previews(R)

0012484332 BIOSIS NO.: 200000202645
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AUTHOR: Jay Gregory D (Reprint); Britt Deborah E; Cha Chung-Ja
AUTHOR ADDRESS: Department of Emergency Medicine, Rhode Island Hospital, 593 Eddy Street, Providence, RI, 02903, USA**USA
JOURNAL: Journal of Rheumatology 27 (3): p594-600 March, 2000 2000
MEDIUM: print
ISSN: 0315-162X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

5/3/5
DIALOG(R)File 5:Biosis Previews(R)

0011851094 BIOSIS NO.: 199900110754
Articular cartilage superficial zone protein (SZP) is homologous to %%%megakaryocyte%%% %%%stimulating%%% factor precursor and is a multifunctional proteoglycan with potential growth-promoting, cytoprotective, and lubricating properties in cartilage metabolism
AUTHOR: Flannery Carl R (Reprint); Hughes Clare E; Schumacher Barbara L; Tudor Debbie; Aydelotte Margaret B; Kuettner Klaus E; Caterson Bruce
AUTHOR ADDRESS: Connective Tissue Biol. Lab., Cardiff Sch. Biosci., Cardiff Univ., Museum Ave., Pre-Clin. Build., Cardiff CF1 3US, UK**UK
JOURNAL: Biochemical and Biophysical Research Communications 254 (3): p 535-541 Jan. 27, 1999 1999
MEDIUM: print
ISSN: 0006-291X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
? t s5/7/1-5

5/7/1
DIALOG(R)File 5:Biosis Previews(R)

0014452827 BIOSIS NO.: 200300421546
Differential gene expression in the periprosthetic membrane: Lubricin as a new possible pathogenetic factor in prosthesis loosening.
AUTHOR: Morawietz Lars; Gehrke Thorsten; Frommelt Lars; Gratze Petra; Bosio Andreas; Moeller Johannes; Gerstmayer Bernhard; Krenn Veit (Reprint)
AUTHOR ADDRESS: Institute for Pathology, University Clinic Charite, Charite University Hospital, Humboldt University of Berlin, Schumannstrasse 20/21, 10117, Berlin, Germany**Germany
AUTHOR E-MAIL ADDRESS: veit.krenn@charite.de
JOURNAL: Virchows Archiv 443 (1): p57-66 July 2003 2003
MEDIUM: print
ISSN: 0945-6317
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: About 10% of hip endoprostheses will loosen after 10 years. Prosthesis loosening is caused by two different pathomechanisms: aseptic loosening (AL) and septic loosening (SL). This study evaluated differences in gene expression in AL and SL. Eight hybridizations were performed on PIQOR cDNA arrays. Objects of the study were periprosthetic interface tissue samples from two patients with SL and three patients with AL. Tissue parts directly adjacent to the site of RNA isolation were analyzed immuno/histopathologically in order to overcome the problem of tissue heterogeneity. Thirty-three genes were found constantly differentially expressed, among which were cd11b, cd18, cd68, osteopontin and ferritin heavy-chain upregulated in AL and collagen types 1alpha-1, 3alpha-1, integrin alpha-1, thrombospondin2 and nidogen upregulated in SL. The most striking finding was the strong upregulation (from 20-fold

to 323-fold) of %%%megakaryocyte%%% %%%stimulating%%% factor (msf) in all aseptic cases and one of the two septic cases, which was confirmed by real-time reverse transcription-polymerase chain reaction. In this study, msf is %%%linked%%% to prosthesis loosening for the first time. The upregulation in AL suggests an important pathogenetic role: the msf splice product lubricin is responsible for the lubrication of healthy joints, but its excellent lubrication ability may disturb the tight interaction between bone and prosthesis and thereby contribute to prosthesis loosening.

5/7/2
DIALOG(R)File 5:Biosis Previews(R)

0014145377 BIOSIS NO.: 200300104096
Boundary lubrication by lubricin is mediated by O-%%%linked%%% beta(1-3)Gal-GalNAc oligosaccharides.
AUTHOR: Jay Gregory D (Reprint); Harris Darcy A; Cha Chung-Ja
AUTHOR ADDRESS: Department of Emergency Medicine, Rhode Island Hospital, 593 Eddy Street, Providence, RI, 02903, USA**USA
AUTHOR E-MAIL ADDRESS: gregoryjayMD@brown.edu
JOURNAL: Glycoconjugate Journal 18 (10): p807-815 October 2001 2001
MEDIUM: print
ISSN: 0282-0080 _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Lubrication of mammalian joints is mediated by lubricin, a product of %%%megakaryocyte%%% %%%stimulating%%% factor gene (MSF; GenBank accession U70136) expression. Lubricin (Mrapprx240 kDa) is a mucinous glycoprotein which is 50% (w/w) post-translationally modified with beta(1-3)Gal-GalNAc incompletely capped with NeuAc, and lubricates apposed cartilaginous surfaces in the boundary mode through an unknown mechanism. Both bovine and human lubricin were purified from synovial fluid and digested with recombinant glycosidases. Released oligosaccharides were identified and quantified by fluorophore assisted carbohydrate electrophoresis (FACE). Corresponding digests of human lubricin were also assayed in a friction apparatus oscillating latex rubber against polished glass at a pressure of 0.35X106 N/m2 and the coefficient of friction (mu) was measured. Digestion with alpha2,3-neuraminidase decreased lubricating ability by 19.3%. Partial removal of beta(1-3)Gal-GalNAc moieties by endo-alpha-N-acetyl-D-galactosaminidase reduced lubricating ability by 77.2%. Human lubricin digested with combined alpha2,3-neuraminidase and beta1-3,6-galactosidase continued to lubricate at 52.2% of its nominal value. Both bovine and human lubricin released 48.6% and 54.4% of total beta(1-3)Gal-GalNAc sidechains following digestion with endo-alpha-N-acetyl-D-galactosaminidase. Biological boundary lubrication by synovial fluid in vitro is provided primarily by extensive O-%%%linked%%% beta(1-3)Gal-GalNAc.

5/7/3
DIALOG(R)File 5:Biosis Previews(R)

0013268847 BIOSIS NO.: 200100440686
Homology of lubricin and superficial zone protein (SZP): Products of %%%megakaryocyte%%% %%%stimulating%%% factor (MSF) gene expression by human synovial fibroblasts and articular chondrocytes localized to chromosome 1q25
AUTHOR: Jay Gregory D (Reprint); Tantravahi Umadevi; Britt Deborah E; Barrach Hans J; Cha Chung-Ja
AUTHOR ADDRESS: The Department of Medicine, Section of Emergency Medicine, Rhode Island Hospital, 593 Eddy Street, Providence, RI, 02903, USA**USA
JOURNAL: Journal of Orthopaedic Research 19 (4): p677-687 July, 2001 2001
MEDIUM: print
ISSN: 0736-0266
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have previously identified %%%megakaryocyte%%% %%%stimulating%%% factor (MSF) gene expression by synovial fibroblasts as the origin of lubricin in the synovial cavity. Lubricin is a mucinous glycoprotein responsible for the boundary lubrication of articular cartilage. MSF has a significant homology to vitronectin and is composed of 12 exons. RNA was purified from human synovial fibroblasts and articular chondrocytes grown in vitro from tissue explants obtained from subjects without degenerative joint disease. RT-PCR was used with multiple complimentary primer pairs spanning the central mucin expressing exon 6 of the MSF gene and individual exons on both the N- and C-terminal sides of exon 6. Exons 2, 4 and 5 appear to be variably expressed by synovial fibroblasts and articular chondrocytes. Lubricating mucin, in the form of MSF, is expressed by both chondrocytes and synovial fibroblasts in vitro. Both lubricin and superficial zone protein (SZP), a related proteoglycan, share a similar primary structure but could differ in post-translational modifications with O-%%%linked%%% oligosaccharides which are predominant in lubricin and with limited amounts chondroitin and keratan sulfate found in SZP. Since most of the MSF exons are involved in the expression of lubricating mucin, a strong homology to vitronectin persists. It is therefore appropriate to consider that both SZP and lubricin occupy a new class of biomolecules termed tribonectins. Screening of a human genome bacterial artificial chromosome (BAC) library with a cDNA primer pair complimentary for exon 6 identified two clones. Both clones were complimentary for chromosome 1q25 by in situ hybridization. This same locus was previously implicated in camptodactyl-arthropathy-pericarditis syndrome (CAP) by genetic mapping. It is hypothesized that CAP, a large joint arthropathy, may be associated with ineffective boundary lubrication provided by synovial fluid.

5/7/4

0012484332 BIOSIS NO.: 200000202645
Lubricin is a product of %%%megakaryocyte%%% %%%stimulating%%% factor gene expression by human synovial fibroblasts
AUTHOR: Jay Gregory D (Reprint); Britt Deborah E; Cha Chung-Ja
AUTHOR ADDRESS: Department of Emergency Medicine, Rhode Island Hospital, 593 Eddy Street, Providence, RI, 02903, USA**USA

JOURNAL: Journal of Rheumatology 27 (3): p594-600 March, 2000 2000
MEDIUM: print
ISSN: 0315-162X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objective. The boundary lubricating ability of human synovial fluid has been attributed to lubricin, a mucinous glycoprotein. We investigated the primary structure of lubricin and its cellular origin. Methods. Lubricin was purified from pooled synovial fluid aliquots with normal lubricating activity obtained from patients with osteoarthritis. Lubricating ability of lubricin was assayed in a friction apparatus that oscillates natural latex against a ring of polished glass. Native and lubricin deglycosylated with O-glycosidase DS and NANase III were trypsinized and sequenced by liquid chromatography mass spectrometry. Sequence results were compared to known structures in GenBank. Sequence data from strong matches were used in creating cDNA primers for reverse transcription-polymerase chain reaction (RT-PCR) with RNA from human synovial fibroblasts obtained intraoperatively. Results. Purified lubricin possesses an apparent molecular weight of 280 kDa on sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE). Deglycosylation decreased the apparent molecular weight on SDS-PAGE to 120 kDa. Sequences specific for %%%megakaryocyte%%% %%%stimulating%%% factor precursor (MSF) were identified in GenBank. A 100% match was observed for exons 6 though 9 of MSF. Lubricin/MSF reduced the coefficient of friction (m) in the latex:glass bearing from 0.131 to 0.047. MSF is 1404 amino acids in size with multiple functional domains similar to vitronectin. The reported structure of MSF contains a centrally located mucin (exon 6) with 76 repeats of the degenerate motif of KEPAPTT, the presumed site of extensive O-%%%linked%%% glycosylation. RT-PCR with primers complementary for Pro214-Ala307 in exon 6 and RNA from human synovial fibroblasts produced the predicted product size of 280 bp. Conclusion. Lubricin is secreted by synovial fibroblasts via expression of the MSF gene. Lubricin is constructed of MSF exons 6 through 9 but the presence of other exons cannot be excluded. Lubricin/MSF is the only lubricating component in the final lubricating fraction of human synovial fluid.

5/7/5
DIALOG(R)File 5:Biosis Previews(R)

0011851094 BIOSIS NO.: 199900110754
Articular cartilage superficial zone protein (SZP) is homologous to %%%megakaryocyte%%% %%%stimulating%%% factor precursor and is a multifunctional proteoglycan with potential growth promoting, cytoprotective, and lubricating properties in cartilage metabolism
AUTHOR: Flannery Carl R (Reprint); Hughes Clare E; Schumacher Barbara L; Tudor Debbie; Aydelotte Margaret B; Kuettner Klaus E; Caterson Bruce
AUTHOR ADDRESS: Connective Tissue Biol. Lab., Cardiff Sch. Biosci., Cardiff Univ., Museum Ave., Pre-Clin. Build., Cardiff CF1 3US, UK**UK
JOURNAL: Biochemical and Biophysical Research Communications 254 (3): p535-541 Jan. 27, 1999 1999
MEDIUM: print
ISSN: 0006-291X

DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have performed cDNA sequencing and homology analyses to elucidate the complete amino acid composition for a superficial zone protein (SZP) from human and bovine cartilage which has previously been shown to be a proteoglycan specifically synthesized by chondrocytes located at the surface of bovine articular cartilage and also some synovial lining cells. The results of this study indicate that cartilage SZP is homologous with a glycoprotein first described as the precursor protein of a %%%megakaryocyte%%% %%%stimulating%%% factor (MSF). Sequence comparisons and analyses indicate that (i) the amino acid composition of SZP is highly conserved between bovine and human species, (ii) SZP contains structural motifs at the N- and C-termini which are similar to those found in vitronectin and which may impart cell-proliferative and matrix-binding properties to the molecule, and (iii) SZP contains large and small mucin-like repeat domains composed of the sequences KEPAPTTT/P (76-78 repeats) and (6-8 repeats), respectively, which occur within a large central region of apprx 940 amino acids. The mucin-like domains are likely to be substituted with O-%%%linked%%% oligosaccharides which would impart lubricating properties to SZP which in part accumulates at the articular cartilage-synovial fluid interface. Additionally, we have shown that interleukin-1 inhibits the biosynthesis of chondrocyte SZP, while TGF-beta and IGF-1 increase its biosynthesis, and that in pathological (osteoarthritic) human articular cartilage SZP mRNA can be expressed as an alternatively spliced variant lacking exons 4 and 5 which encode a potential heparin binding domain. The occurrence of different SZP alternative splice variants and the differential expression of SZP in the presence of cytokines and growth factors suggest that SZP may play an important cytoprotective role by preventing cellular adhesion to the articular cartilage surface in normal cartilage metabolism. Modifications to the structure of SZP, coupled with inhibition of SZP synthesis during inflammation, may account for the attachment and invasion of pannus observed in inflammatory joint diseases.
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Set	Items	Description
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S2	1	S1 AND GLYCOSYLATION
S3	0	S1 AND EXON()VI
S4	2	S1 AND EXON
S5	5	S1 AND LINKED

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$14.00 8 Type(s) in Format 3
$8.75 5 Type(s) in Format 7
$22.75 13 Types
$27.81 Estimated cost File5
$1.40 TELNET
$29.21 Estimated cost this search
$29.22 Estimated total session cost 1.150 DialUnits
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